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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,057

02/02/2006

Jean-Francois Delhomel

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23117

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07/05/2007

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EXAMINER

ZUCKER, PAUL A

ART UNIT

PAPER NUMBER

1621

MAIL DATE

DELIVERY MODE

07/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/563,057

Applicant(s)

DELHOMEL ET AL.

Examiner

Paul A. Zucker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 14-26 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/3/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 18, 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Each of the enumerated claims recites the limitation "preferably". The limitation "preferably" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. Claims 18, 24 and 25 are therefore rendered indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 14-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain et al (US 5,523,302 06-1996).

Instantly claimed is a method for preparing 1,3-diphenylprop-2-en-1-one derivatives substituted by a carboxyalkyloxy or carboxyalkylthio group, comprising contacting a hydroxyl- or thiol-bearing 1,3-diphenylprop-2-en-1-one with at least one O-protected carboxyalkylhalide of formula (II) followed acid hydrolysis of the ester obtained.

Cain teaches (Column 25, Scheme VII) a process for the synthesis of the compounds of formula (I_g) which proceeds via the acid-catalyzed condensation of a hydroxyl-substituted benzaldehyde and a substituted acetophenone to produce a hydroxyl-substituted benzaldehyde derivative followed by the alkylation (See conversion (XVII)→ (I_g) with G= leaving group, left branch) with a compound bearing a protecting group and a leaving Group followed by deprotection.

The difference between the process taught by Cain and that instantly claimed is that Cain does not, in this scheme define the groups W and leaving group G while in the instant case these are defined as a carboxy group and halo group, respectively.

Cain, however, teaches (Column 50, lines 5-15) the alkylation of a phenol at 65°C in DMF in the presence of potassium carbonate as basic catalyst. This corresponds to the alkylation process suggested above by Cain. Cain further teaches (Column 50, lines 35-48) the deprotection, under acidic conditions, of the alkylation product in the presence of excess trifluoroacetic acid at room temperature. The determination of the proper amount of trifluoroacetic acid to employ would be determined by the artisan in the course of optimization of the process

Thus one of ordinary skill in the art would have been motivated to use the method for alkylation taught by Cain to perform the synthesis of 1,3-diphenylprop-2-en-1-ones taught by Cain. Since the use of such methodology is presented in this context, there would have been a reasonable expectation for success.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art.

4. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cain et al (US 5,523,302 06-1996) as applied to claims 14-25 above, and further in view of Szajda et al (Pharmazie, 1989, 44, pages 190-191).

Instantly claimed is a method for preparing 1,3-diphenylprop-2-en-1-one derivatives substituted by a carboxyalkyloxy or carboxyalkylthio group, comprising contacting a

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hydroxyl- or thiol-bearing 1,3-diphenylprop-2-en-1-one with at least one O-protected carboxyalkylhalide of formula (II) followed acid hydrolysis of the ester obtained to give a compound of formula (I).

The difference between the process taught by Cain and that instantly claimed is that Cain does not teach the application of his synthesis to compounds of formula (I) as set forth in claim 26.

Szajda, however, teaches (Scheme) the synthesis of compounds of formula (I) in which X_1 - X_3 and $X_5 = H$ and $X_5 = G4-R4$ where $R4$ is carboxy-substituted. Szajda teaches (Scheme) the alkylation of a hydroxyl-bearing 1,3-diphenylprop-2-en-1-one with an O-protected carboxyalkylhalide to give a compound that corresponds to an ester of the compound of formula (I). Szajda does not teach the hydrolysis of this ester.

Thus one of ordinary skill in the art would have been motivated to apply the process of Cain to the compound of Szajda in order to produce a compound for which the method of hydrolysis to the acid was known. Since similar chemistries are involved there would have been a reasonable expectation for success.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art.

Conclusion


5. Claims 14-26 are pending. Claims 14-26 are rejected.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 571-272-0650. The examiner can normally be reached on Monday-Friday 5:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Evonne Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Paul A. Zucker
Primary Examiner
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